

REMARKS

Reconsideration of the pending application is respectfully requested on the basis of the following particulars:

Rejection of claims 1, 4, 6, 8 in view of Searls (U.S. 6,580,608)

Claims 1, 6, and 8 presently stand rejected as being anticipated by Searls (U.S. 6,580,608), and claim 4 is rejected as being obvious in view of Searls. These rejections are respectfully traversed for at least the following reasons.

Claim 1 has been amended to further recite that at least a printed circuit board is disposed in the main body, as previously recited in claim 2. Claim 2 is amended accordingly, deleting this feature now incorporated into claim 1.

Searls does not disclose or suggest a printed circuit board disposed in a main body, the main body having an airflow channel piercing there-through through from a top surface to a bottom surface, wherein the airflow channel is formed by an inner wall extending from the top to the bottom surface.

On the contrary, Searls provides a plurality of electronic components 10-13 arranged on side walls 17-20 disposed to define a passageway 14.

As shown in Fig. 2 of Searls' patent, "each of the electronic components 10-13 has a heat conductive backing member 21-24 which can form one of the side walls of the passageway" (*Searls*; col. 2, lines 37-39). The heat conductive backing members 21-24 form, or are soldered on, corresponding side walls 17-20 of the passageway 14, wherein the upper and the lower ends 15 and 16 of the passageway 14 are open at opposite ends (see *Searls*; col. 2, lines 27-60).

Each of the electronic components 10-13 further comprises three electrical leads 26-28 extending from the lower open end 16 of the passageway 14 to allow the electronic components 10-13 and the passageway 14 to stand upright of the substrate 29. When the apparatus 9 is coupled to the substrate 29, the electronic assembly 30 is formed.

In the Office Action, the Examiner regards the substrate 29 and the apparatus 9 of the electronic assembly 30 as the surface and the main body of the present invention,

respectively. As recited in the amended Claim 1 of the present invention, the electronic apparatus comprises at least a printed circuit board disposed in the main body. However, as described in col. 2 lines 37-38 and lines 48-51 of Searls' patent, each of the electronic components 10-13 has a heat conducting backing member 21-24, and the heat conducting backing member 21-24 are directly soldered on the side walls 17-20 of the passageway 14 for forming the apparatus 9.

Further, as described in col. 2 lines 64-66, the substrate 29 is a circuit board, and the electronic components 10-13 are standing upright of the circuit board 29 by coupling the electrical leads 26-28 of the electronic components 10-13 to the circuit board 29. Accordingly, no circuit board disposed in the apparatus 9 of Searls' patent, and the circuit board 29 upon which the components 10-13 are mounted is actually located outside of the apparatus 9 as shown in Fig. 2 of Searls' patent.

In addition, since the circuit board 29 is exposed outside of the apparatus 9 in Searls' patent, the circuit board 29 may contact with the foreign objects and cause the damage of the apparatus 9. In contrast, in the amended Claim 1 of the present invention, the main body has an airflow channel piercing through the main body from the top surface to the bottom surface thereof, wherein the airflow channel is formed by an inner wall extending from the top surface to the bottom surface, and the printed circuit board is disposed in the main body. Thus it is to be understood that the foreign objects cannot get into the main body, and the interior printed circuit board can also be protected as shown in Fig. 3 of the present invention.

Moreover, as described in, Searls further discloses that each of the electronic components 10-13 is located at the respective side walls and arranged in heat conducting relation with the side walls of the heat sink 25 by a soldered connection between the heat conductive backing members 21-24 and the side walls (see *Searls*; col. 2 lines 34-51).

However, according to the present invention as set forth in claim 1, the printed circuit board is disposed in the main body, and the main body has an air flow channel piercing through the main body from the top surface to the bottom surface. Hence, heat generated from electronic elements on the interior printed circuit board can be transferred to the surface of the electronic apparatus by conduction or radiation and dissipated by the

cyclic airflow through the airflow channel of the main body (as described in paragraph [0038] of the present application). In other words, for dissipating the heat through the passageway 14, the contact between the electronic components 10-13 and the side walls of the passageway 14 are necessary in Searls' patent, but not in the present invention. Accordingly, the operating principle of Searls' patent is different from the present invention.

Since Searls does not disclose or suggest "at least a printed circuit board disposed in the main body," Searls does not anticipate the present invention. Further, because Searls relies on a different operating principle than the present invention (requiring contact between heat generating components and the side walls of the passageway), there is no motivation or suggestion to modify Searls, or to use Searls' teachings to modify another apparatus, to arrive at the present invention.

Therefore, it is respectfully submitted that claims 1, 2-6, and 8 are allowable over the cited reference. Accordingly, withdrawal of these rejections is requested.

Rejection of claim 5 under 35 U.S.C. § 103(a)

Claim 5 presently stands rejected as being unpatentable over Searls in view of Chuang (U.S. 2004/0095713). This rejection is respectfully traversed for at least the following reasons.

Claim 5 depends from claim 1. As discussed above, Searls fails to disclose or suggest each and every element set forth in claim 1. It is respectfully submitted that Chuang fails to supplement the deficiencies of Searls discussed above, and therefore the combination of Searls and Chuang fails to form a prima facie case of obviousness of claim 5.

Further, as discussed above, there is no motivation or suggestion to modify Searls by locating a printed circuit board within the air passageway 14 taught by Searls, since walls of the air passageway 14 itself are formed by heat generating electrical components 10-13, or by thermally conductive backing members 21-24 to which the heat generating electrical components 10-13 are soldered.

Therefore, it is respectfully submitted that claim 5 is allowable over the cited references, and withdrawal of the rejection is requested.

Allowable subject matter

The examiner has indicated that claims 2 and 3 would be allowable if rewritten in independent form if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The examiner's indication of allowable subject matter is noted with appreciation. Claim 1 has been amended as described above to include the recitation, previously set forth in claim 2, that at least a printed circuit board is disposed in said main body. As discussed above, it is respectfully submitted that none of the cited references disclose or suggest the invention as set forth in amended claim 1.

Conclusion

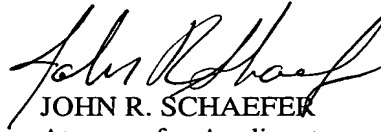
In view of the amendments to the claims, and in further view of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is requested that claims 1, 2-6, and 8 be allowed and the application be passed to issue.

If any issues remain that may be resolved by a telephone or facsimile communication with the Applicant's attorney, the Examiner is invited to contact the undersigned at the numbers shown.

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